CLAIM AMENDMENTS

1. (Currently Amended) A material for the treatment of gaseous media containing volatile organic compounds, the porous material presenting an adsorption capacity of about 20 to 30% with respect to its dry weight and comprising ~~about 47 to 52 wt% of~~ a composite structure of silicon and carbon, ~~about 12 to 20 wt%~~ carbon, ~~about 5 to 7 wt%~~ hydroxyl, and ~~about 1 to 2 wt%~~ oxygen, about one-third of the material comprising a peripheral volume of 75 to 85% porosity produced by pores having dimensions in a range from 10 to 50 Å, and about two-thirds of the material comprising a central volume, 80 to 90% of the central volume comprising cavities having dimensions in a range from about 200 Å to 2 x 10^4 Å.

Claim 2 (Cancelled).

3. (Previously Presented) The material according to Claim 1, having a specific surface of between 1200 and 2200 m^2/g.

4. (Previously Presented) The material according to Claim 1, comprising about 20 wt% aluminum oxides and about 5 wt% iodides.

5. (Previously Presented) The material according to Claim 1, having a relative humidity lower than 2% of its dry weight.

6. (Previously Presented) A process for the treatment of a gaseous medium containing volatile organic compounds, consisting of directing a flow of the gaseous medium over a porous material according to Claim 1, to cause adsorption of the flow, which penetrates pores and cavities of the material so absorption of the flow, during which a chemical reaction occurs between the volatile organic compounds of the flow and the material, to transform the volatile organic compounds into nontoxic gases.

7. (Previously Presented) The process according to Claim 6, in which contact time between the gaseous flow and the material is between 0.08 and 0.12 sec.

8. (Currently Amended) The process for obtaining a porous material according to Claim 1 comprising:

preparing a base constituent of clay comprising about 30 wt% of a clay with a particle size greater than 180 μm and about 70 wt% of a clay with a particle size between 10 and 20 μm~~;~~;

impregnating the base constituent with an aqueous solution comprising~~ about 10% by volume of~~ acetic acid,~~ between 5 and 10% by volume of~~ citric acid, and~~ between 15 and 20% by volume of~~ peroxide,~~ the volume of the solution being essentially equal to the volume of the base constituent~~;;

pretreating the base constituent impregnated with the aqueous solution by mixing at a first speed to create a porous structure,

mixing~~, under a pressure between 2 and 10 bar,~~ the base constituent, after pretreating with an acidified liquid with a strong oxidizing potential, at a second speed lower than the first speed, to cause the acidified liquid to penetrate the pretreated constituent and to form a gel,~~ the pretreated constituent being between 42 and 48% of the total volume mixed, while the liquid is between 58 and 52% of the total volume mixed~~;

mixing the gel with a solution with a strong oxido-reductive potential,~~ which represents about 10% of the total volume,~~ a mixture of carbon and alumina~~ representing about 12 to 15% of the total volume~~, and calcium sulfate~~ representing about 2% of the total volume~~; and

drying and pressing the mixture~~ produced by ultrasound treatment, and pressing the mixture, after drying, under a pressure between 8 and 10 bar~~ to produce the porous material, about one-third of the material comprising a peripheral volume of 75 to 85% porosity produced by pores having dimensions in a range from 10 to 50 Å, and about two-thirds of the material comprising a central volume, 80 to 90% of the central volume comprising cavities having dimensions in a range from about 200 Å to 2 x 10^4 Å.

9. (Previously Presented) The process according to Claim 8, implemented continuously.

10. (Previously Presented) The process according to Claim 8, including heating the base constituent impregnated with the aqueous solution in pretreating, at a temperature between 200 and 250°C.

11. (Previously Presented) The process according to Claim 8, including applying ultrasound waves at pretreating, at a unit power of 2000 W and with an amplitude of 15 to 30 μm.

12. (Previously Presented) The process according to Claim 8, including, in pretreating, mixing at a third speed, lower than the first and second speeds, to enlarge the cavities and pores.

13. (Previously Presented) The process according to Claim 8, including filtering a liquid resulting from pretreating the base constituent.

14. (Previously Presented) The process according to Claim 8, in which the acidified liquid comprises about 10% by volume of a solution with a strong oxidizing potential.

15. (Previously Presented) The process according to Claim 8, including mixing the base constituent, after pretreating, and the acidified liquid while being heated to a temperature between 90 and 120°C.

16. (Previously Presented) The process according to Claim 8, including mixing of the gel at a temperature between 70 and 80°C.

17. (Previously Presented) The process according to Claim 8, wherein the treatment by ultrasound waves, to dry the mixture is carried out at a length of 20 to 30 cm, under a specific output of 3 to 5000 W, an amplitude of 15 to 60 μm, and a frequency of about 20 MHz.

18. (Previously Presented) The process according to Claim 8, including drying the mixture under a partial vacuum of 120 to 150 mbar and at a temperature between 90 and 100°C.

19. (Previously Presented) The process according to Claim 8, comprising extruding the mixture, after drying.

20. (Previously Presented) An apparatus for implementation of the process according to Claim 8, comprising:

an impregnator including a first mixer rotating at a speed between 1200 and 1400 rpm to form a first mixture,

a first reactor including a second mixer rotating at a speed between 800 and 1000 rpm to accomplish mixing under pressure between 2 and 10 bar, to create a second mixture as a gel,

a second reactor including a mixer to create a third mixture,

a device for linear transfer of the third mixture and at least one ultrasound device delivering a power of 3 to 5000 W, on at least one part of a trajectory of said third mixture, and

a high-pressure extrusion device.

21. (Previously Presented) The apparatus according to Claim 20, in which the impregnator includes a heating device for heating to a temperature between 200 and 250°C, as well as a device for emitting ultrasound waves.

22. (Previously Presented) The apparatus according to Claim 20, including a filtration device for filtering a liquid extracted from the impregnator.

23. (Previously Presented) The apparatus according to Claim 20, wherein the impregnator includes a second mixer rotating at a speed between 500 and 800 rpm.

24. (Previously Presented) The apparatus according to Claim 20, wherein the first reactor includes a heating device heating to a temperature between 90 and 120°C.

25. (Previously Presented) The apparatus according to Claim 20, wherein the second reactor includes a heating device for heating to a temperature between 70 and 80°C.

26. (Previously Presented) The apparatus according to Claim 20, in which the linear transfer device of the second reactor includes a double screw having a rotation speed between 5 and 150 rpm.

27. (Previously Presented) The apparatus according to Claim 20, wherein the extrusion device includes a variable screw which subjects the material from the second reactor to a pressure between 8 and 10 bar.